

#### ABSTRACT OF THE DISCLOSURE

An acoustic emission sensor is mounted on a flying slider opposed to a rotating recording medium, for example. The acoustic emission sensor outputs a detection signal in response to the sound of collision. When a protrusion exists on the recording medium, the flying slider is expected to collide against the protrusion at a predetermined fixed angular position. A variation is induced in the detection signal based on the collision between the flying slider and the protrusion in synchronization with the rotation of the recording medium. Specifically, when a variation is synchronized with the angular position signal of the recording medium, the variation should correspond to a protrusion existing on the surface of the recording medium. If the component corresponding to the variation is extracted out of the detection signal, a protrusion on the recording medium can be determined at a higher accuracy.